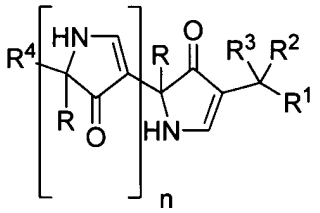
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

We claim:

1. (Currently amended): A process for preparing a polypyrrolinone having the formula **(38)**:



(38)

wherein:

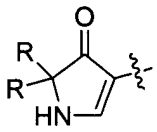
R is independently selected from a group consisting of a straight C_1-C_6 alkyl, a branched C_3-C_7 alkyl, C_3-C_7 cycloalkyl, a straight C_1-C_6 alkenyl, a branched C_3-C_7 alkenyl, C_1-C_4 hydroxyalkyl, C_1-C_4 thioalkyl, C_1-C_4 methylthioalkyl, $-(CH_2)_oN(R^5)_2$, $-(CH_2)_oCO_2H$, $-(CH_2)_oCON(R^5)_2$, heteroaryl, phenyl optionally substituted with one to three hydroxyl, ~~lower~~ C_1-C_8 alkoxy, halo, nitro, or cyano groups, and ~~C_7-C_{12}~~ benzyl optionally substituted with ~~the same groups as above or heteroaryl~~ one to three hydroxyl, C_1-C_8 alkoxy, halo, nitro or cyano groups;

R^1 is hydrogen, hydroxyl, ~~lower~~ C_1-C_8 alkoxy, amino or alkoxycarbonyl-protected amino;

R^2 is R , carboxyl, a carbonyl linked to a solid support or alkoxycarbonyl;

R^3 is R or hydrogen;

R^4 is R or **(46)**;



(46)

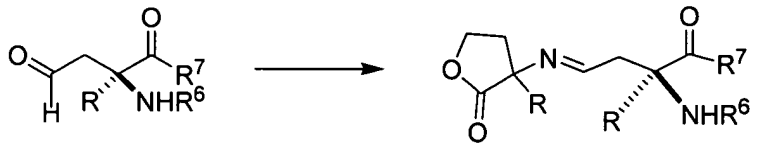
R^5 is hydrogen or ~~lower~~ C_1-C_8 alkyl;

n is 0 to 3;

o is 1 to 4;

comprising the steps:

(a) ~~exposing~~ reacting an α-amino-α-substituted-1,4-dioxo compound **(39)**, optionally with an alkoxycarbonyl protecting group, ~~to a plurality of treatments~~ with a 2-substituted-2-aminovalerolactone, trimethylorthoformate, optionally in the presence of a solvent, to produce imine **(40)**



(39) **(40)**

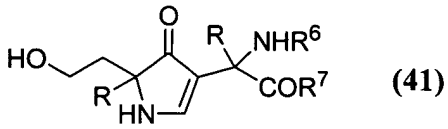
wherein:

R^6 is an amino protecting group,

R^7 is a C_1-C_4 alkoxy or a carboxyl or carbamido linked to a solid support, or

R^6 and R^7 together form a pyrrolinone ring;

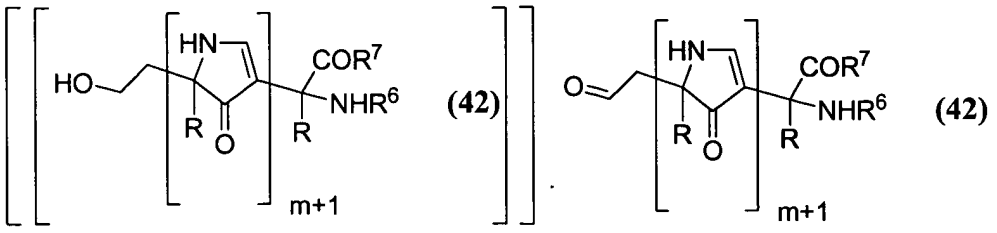
(b) cyclizing **(40)** by forming metalloimine carbanion with base optionally in the presence of a crown ether to form a pyrrolinone **(41)**;



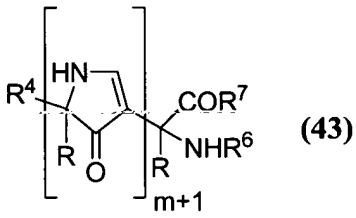
(41)

(c) oxidizing the primary alcohol to the corresponding aldehyde;

(d) repeating steps (a)-(c)m times to produce polypyrrolinone **(42)**;



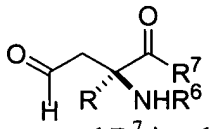
(e) terminating the synthesis by repeating steps (a) through ~~(e)~~(b) using α-substituted amino ~~acid~~ ester in



(f) place of the valerolactone in step ~~(b)~~(a) to yield **(43).**

2. (Original): A process according to claim 1 wherein said polypyrrolinones are substantially diastereomerically pure.

3. (Currently amended): A process according to Claim 1 wherein the initial α-amino-α-substituted-1,4-dioxo compound is a compound **(39)** and R^6 is an alkoxycarbonyl



protecting group, R is as defined above and R^7 is a ~~lower~~ C_1-C_8 alkoxy group,

4. (Original): A process according to claim 1 wherein the oxidant in step (c) is oxalyl chloride, a tertiary amine and DMSO.

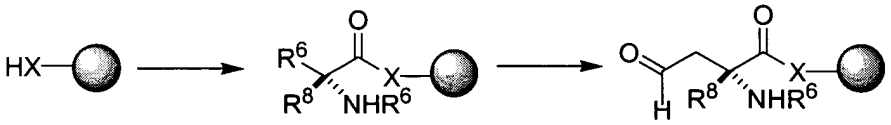
5. (Original): A process according to Claim 4 wherein the tertiary amine is DBU or di-*iso*-propylethyl amine.

6. (Original): A process according to Claim 1 wherein the crown ether in step (b) is 18-crown-6.

7. (Original): A process according to Claim 1 wherein the base in step (b) is potassium hexamethyldisilazane.

8. (Withdrawn): A solid-phase process according to claim 1 wherein R^7 is a carboxyl or carbamido linked to a solid support further comprising the steps of:

(f) attaching a latent aldehyde **(40)** to a solid support wherein and converting the latent aldehyde to an aldehyde **(41);**



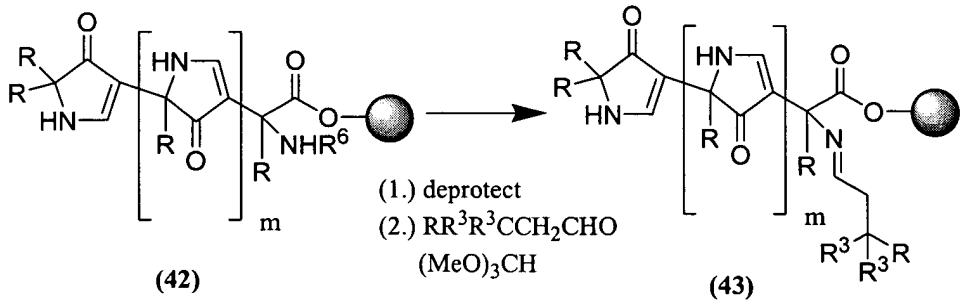
(40) **(41)**

wherein:

R^8 is 3-methyl-1-but-2-enyl, 2,2-dimethoxyethyl, 2-hydroxyethyl, and

X is nitrogen or oxygen;

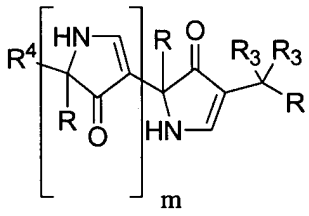
(g) repeating steps (a)-(c) m times and terminating the synthesis as in step (e) to produce polypyrrolinone **(42);**



(42) **(43)**

(h) cleaving the polypyrrolinone from the resin by deprotecting the α-amino group, and exposing the α-amino acid to a plurality of treatments with an aldehyde, trimethylorthoformate, optionally in the presence of a solvent, to produce the corresponding imine **(43)**; and,

(i) cyclizing **(43)** by forming the metalloimine carbanion with base, optionally in the presence of a crown ether, to produce a pyrrolinone **(44)**.



(44)

9. (Withdrawn): A process according to claim 7 wherein the oxidant in step (c) is oxalyl chloride, a tertiary amine and DMSO.

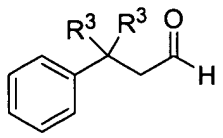
10. (Withdrawn): A process according to Claim 7 wherein the tertiary amine is DBU or di-*iso*-propylethyl amine.

11. (Withdrawn): A process according to Claim 7 wherein the crown ether in step (b) is 18-crown-6.

12. (Withdrawn): A process according to Claim 7 wherein the base in step (b) is potassium hexamethyldisilazane.

13. (Withdrawn): A process according to Claim 7 wherein R^6 is a trialkylsilylethoxycarbonyl group.

14. (Withdrawn): A process according to Claim 7 wherein the aldehyde in step (h) is a 3-phenylpropionaldehyde **(45)** derivative optionally substituted at the 3-position with one or two R^3 substituents.



(45)

15. (Withdrawn): A process according to Claim 7 wherein the aldehyde in step (h) is 3-phenylpropionaldehyde.